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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,963	11/01/2004	Egbert Schoela	260188US0PCT	8034
22850 7590 04/23/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER JOY, DAVID J	
			ART UNIT 1774	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/23/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/23/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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**Office Action Summary**

Application No.

10/510,963

Applicant(s)

SCHOELA ET AL.

Examiner

David J. Joy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Claims 1-21 are pending as filed in the amendment dated January 17, 2007, with Claims 1-15 as amended in that filing, and Claims 16-21 as newly added in that filing.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Amendments***

3. Applicant's alterations and amendments to the Abstract, filed January 17, 2007, have been fully considered and are corrective. As such, the objection to the Abstract has been withdrawn.
4. The rejections under 35 U.S.C. § 112 of Claims 1, 2, 8-11 and 13-15 have been overcome by Applicant's amendments to those claims. As such, the rejections of Claims 1, 2, 8-11 and 13-15 under 35 U.S.C. §112, second paragraph, as being indefinite, have been withdrawn.

*Claim Rejections - 35 USC § 102*

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1 – 6 and 15 stand rejected and additionally Claims 1, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by the U.S. Patent of Oleiko, et al. (US 6,305,492; hereinafter referred to as “Oleiko”).

7. With regard to Claim 1, Oleiko teaches an acrylic sheet (see Abstract; see also Column 6, Line 59). The dimension of the sheet is 2 x 2 m or greater (see Column 8, Lines 12 – 13; see also Column 10, Lines 60 – 62; see also Column 15, Lines 63 - 67) and the thickness is more than 8 mm (see Column 5, Line 58). The sheet contains threads, tapes, grids or nets made from a material incompatible with the acrylic sheet (see Column 6, Lines 59-62). The sheet also comprises a filler that is present in the amount of 40 to 80 percent by weight (see Column 6, Lines 23 – 29; see also Column 10, Lines 38-43).

8. In addition, despite the fact that Oleiko recites that the noise protection wall segment consists of one of more transparent sheets, Oleiko also teaches that the

polymerizable compositions may include such conventional additives as dyestuffs and pigments (see Column 10, Lines 30-37). Consequently, it follows that the presence of those materials, in the amounts taught by Oleiko, would make the transparent sheets non-transparent. Therefore, the teachings of Oleiko anticipate both the “non-transparent sheet” limitation of Claim 1, as well as the limitations of Claim 15.

9. As for Claims 2, 3, 16 and 17, Oleiko states that acrylic sheet in the range from more than 8 mm to 40 mm. The sheet is “approximately 20 mm thick” which clearly meets the range as claimed (see Column 5, Lines 58 – 59; see also Column 15, Lines 63 – 67). Further, Oleiko teaches that the sheet has a thickness of approximately 2 to 30 mm, which would anticipate both the limitation that the thickness is more than 12 mm, as well as the limitation that the thickness is in the range from greater than 10 to 35 mm (see Column 10, Lines 55-65).

10. In terms of Claims 4, 5 and 6, Oleiko addresses the nature and quantity of the fillers. Oleiko teaches that the proportion of the fillers is in the range from 50 to 60 percent by weight (see Column 10, Lines 38 – 43). Oleiko further addresses that the sheet has substantial homogeneity of the fillers in the sheet (see Column 6, Line 35). Oleiko also states that the filler is from a group consisting of talc, dolomite, naturally

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occurring talc-and-dolomite intergrowths, mica, quartz, chlorite, aluminum oxide, aluminum hydroxide, clays, silicon dioxide, silicates, carbonates, phosphates, sulphates, sulphides, metal oxides, powdered glass, glass beads, ceramic, kaolin, porcelain, cristobalite, feldspar, chalk and mixtures thereof (see Column 6, Lines 23 – 29; see also Column 10, Lines 30 – 37).

*Claim Rejections - 35 USC § 103*

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claim 7 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the U.S. Patent of Oleiko, et al. (US 6,305,492) in view of the U.S. Patent of Gaku, et al. (US 4,904,760). Oleiko teaches all of the claimed features and limitations of the acrylic sheet that appear in Claim 1 (as discussed above). However, Oleiko is (technically) silent as to whether the filler particles used are lamellar fillers.

13. Gaku, drawn to a thermosetting resin composition (which like the instant invention utilizes fillers to achieve increased resistant characteristics in the final product), teaches “examples of suitable reinforcing agents of fillers include ... lamellar

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filler, such as glass, molten glass, silica, fused silica, synthetic silica, silicon carbide, alumina, aluminum nitride, silica alumina, boron nitride, titanium oxide, wollastonite, mica, synthetic mice, gypsum, calcium carbonate, magnesium carbonate and magnesium oxide (see Column 9, Line 57 – Column 10, Line 14). Given the fact that Oleiko teaches using several of the same filler compounds mentioned in Gaku (which Gaku clarifies that they qualify as lamellar fillers), it would have been obvious to a person having ordinary skill in the art to use fillers, at the time of invention, that are lamellar in nature.

14. Claims 8 and 10 stand rejected and Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the U.S. Patent of Oleiko, et al. (US 6,305,492) in view of the European Patent of Imperial Chemical Industries PLC (EP 0 516 299) (hereinafter "Imperial"). Oleiko teaches all of the claimed features and limitations of the acrylic sheet that appear in Claim 1 (as discussed above). However, Oleiko is silent as to whether the average particle size of the filler used is in the range from 0.01 to 80  $\mu\text{m}$ . In addition, Oleiko teaches all of the claimed features and limitations of polymerizable system, except for the fact that Oleiko fails to address both the presence of a binder in the polymerizable system, as well as the viscosity of the polymerizable system (see Column 10, Lines 1 – 43).

15. In terms of Claims 8, 18 and 19, Imperial, drawn to highly filled, polymerizable compositions, teaches examples of suitable fillers that not only meet the group of claimed fillers, but also overlaps with the group as discussed in Oleiko (see Page 3, Lines 30 – 38). Imperial also teaches that the preferred fillers have an average particle size in the range from 0.01 to 80  $\mu\text{m}$ . Specifically, Imperial teaches that the filler particles have a maximum diameter of 150  $\mu\text{m}$ , preferably not more than 90  $\mu\text{m}$  (see Page 3, Line 48 – Page 4, Line 1). Therefore, it follows that the particles' diameters would fall within the ranges as claimed, be it from 0.01 to 80  $\mu\text{m}$ , or from 0.05 to 30  $\mu\text{m}$ , or from 0.1 to 20  $\mu\text{m}$ . As a result, it would have been obvious to a person having ordinary skill in the art at the time of invention to utilize fillers where the average particle size is in the range as claimed.

16. As for Claim 10, Imperial teaches the usefulness of including a binder in the polymerizable system (see Page 4, Lines 35 – 39). Specifically, Imperial states that in certain applications some bonding between the polymer matrix and the particles is achieved by the inclusion of a bonding agent (i.e., a binder). Therefore, it would have been obvious to a person having ordinary skill in the art to have included a binder in the polymerizable system at the time of invention. Additionally, Imperial teaches the



viscosity of the (meth)acrylate system prior to the polymerization is greater than 0.1 Pa•s (where it is well-known that 0.1 Pa•s = 1 P = 100 cP). Specifically, Imperial that in preferred compositions the viscosity measured desirably between 15 and 70 P, but at least 5 P. Therefore, it would also have been obvious to a person having ordinary skill in the art to process the polymerizable system in such a way that the viscosity of the system is greater than 0.1 Pa•s.

17. Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the U.S. Patent of Oleiko, et al. (US 6,305,492) in view of the U.S. Patent Publication of Schoela, et al. (US 2003/0017289; hereinafter "Schoela-'289"). Oleiko teaches all of the claimed features and limitations of the acrylic sheet that appear in Claim 1 (as discussed above). However, Oleiko is silent as to whether the filler is a talc-and-dolomite intergrowth.

18. Schoela, drawn to a self-reinforcing thermoplastically-deformable semi-finished product, teaches fillers which may be used advantageously during production include "naturally occurring adhesions of talc and dolomite." Having looked up the term "adhesion" as it relates to minerals, it appeared that an *adhesion* is synonymous with an *intergrowth*, so an adhesion of talc and dolomite is the very same entity as a talc-and-

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dolomite intergrowth (see Alexandria Online Dictionaries – definition of “adhesion”).

Therefore, it would have been obvious to a person having ordinary skill in the art to have used a talc-and-dolomite intergrowth as a filler at the time of invention.

19. Claim 11 stands rejected and Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over the U.S. Patent of Oleiko, et al. (US 6,305,492) in view of the International Publication of Boesman et al. (WO 01/43952). The International Publication of Boesman et al. was previously mislabeled as the International Publication of Clerq. Hereinafter, all references shall be cited to “Boesman” as that is the proper name of the reference. Oleiko teaches all of the claimed features and limitations of the acrylic sheet that appear in Claim 1 (as discussed above). However, Oleiko is silent as to the inclusion of steel threads that have been embedded into the plastics matrix. Likewise, Oleiko fails to address that these metal strands can also be coated in plastic.

20. Boesman, drawn to a reinforcing structure for stiff composite articles, teaches that metallic elements can be used to reinforce stiff composite articles and to improve the impact properties of the composite article (see Abstract). In addition, Boesman teaches that any metal can be used to provide the metallic elements, but that preferably alloys such as high carbon steel alloys or stainless steel alloys are used (see Page 11,

Lines 21 – 22)). Further, Boesman provides that the metallic elements can possess a polymer coating around the metallic elements, and that any stiff thermoplastic material can be used as a polymer matrix. Boesman specifically teaches that polyamide is a suitable thermoplastic material (see Page 9, Line 22 – Page 10, Line 6). Boesman also teaches that such a polymer coating helps to improve the adhesion between the metallic elements and the polymer matrix (see Page 9, Lines 22 – 26). Consequently, it would have been obvious to a person having ordinary skill in the art to have used either steel threads or coated steel threads (such as polyamide coated steel threads) to reinforce the composite material.

21. Claims 12 – 14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the U.S. Patent of Oleiko, et al. (US 6,305,492) in view of the U.S. Patent of Cameron (US 3,780,156). Oleiko teaches all of the claimed features and limitations of the acrylic sheet that appear in Claim 1 (as discussed above). In addition, Oleiko teaches the steps (a) through (d) of the process for producing the acrylic sheet (see Column 15, Lines 51 – 67; see also Column 16, Lines 5 – 19). However, Oleiko is silent as to the viscosity of the polymerizable condition, be it a quantitative measure thereof, or a qualitative approach to regulate it.

22. Cameron, drawn to a process for making filled methyl methacrylate articles, teaches a process for a methacrylate mixture having a viscosity of 0.5 to 50 P (see Column 4, Lines 27 – 38). Further, Cameron discusses several different approaches to reducing the viscosity of a methacrylate mixture (see Column 2, Lines 13 – 17; see also Column 2, Lines 42 – 46; see also Column 5, Lines 21 – 35). Among the approaches taught, Cameron addresses varying the weight percent of the resin that is being used. Another approach that is taught is viscosity reduction using a modifier. Still another approach has to do with the use of temperature as a viscosity adjuster that has an effect on the methacrylate material. Finally, Cameron teaches why it is essential to control the viscosity of the mixture. Based on the teachings provided therein, it would have been obvious to a person having ordinary skill in the art to have measured and regulated the viscosity of the material at the time of invention.

23. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oleiko in view of Imperial, as applied to Claim 10 above, and further evidenced by the International Publication of Schoela et al. (WO 01/56784). For purposes of this office action, all citations are to the U.S. Patent equivalent (6,726,970 and shall hereinafter be referred to as "Schoela-'970"). Oleiko, in view of Imperial, teaches all of the claimed features and limitations as discussed above. Oleiko is silent as to whether the casting

process is the cell casting process or a modified form thereof. However, Oleiko teaches that the particularly preferred production process is the Rostero process (see Column 9, Lines 31-39). As evidenced by the teachings of Schoela-'970, the cell casting process, or the Rostero process, can be used to polymerize a (meth)acrylate system (see Column 15, Lines 10-12). As such, it follows that the Rostero process is a modified form of the cell casting process. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to have used a cell casting process or modified form thereof to polymerize a (meth)acrylate system.

#### *Response to Arguments*

24. Applicant's arguments filed on January 17, 2007 have been fully considered but they are not persuasive.

25. Applicant argues that the sheet of Oleiko is not only transparent, but that it is intentionally transparent. Applicant adds that Oleiko clearly excludes the presence of materials that would make the transparent sheets non-transparent. As discussed above, despite the fact that Oleiko recites that the noise protection wall segment consists of one of more transparent sheets, Oleiko also teaches that the polymerizable compositions

may include such conventional additives as dyestuffs and pigments, which would make the transparent sheets non-transparent.

26. Applicant further argues that the rejections under 35 U.S.C. § 103(a) of:

Claim 7 as unpatentable over Oleiko in view of Gaku;  
Claims 8 and 10 as unpatentable over Oleiko in view of Imperial;  
Claim 9 as unpatentable over Oleiko in view of Schoela-'289;  
Claim 11 as unpatentable over Oleiko in view of Boesman; and  
Claims 12-14 as unpatentable over Oleiko in view of Cameron,

should be withdrawn. However, given the discussion of the arguments made about Oleiko, hereinabove, these rejections are deemed to still be valid and stand as rejected.

### *Conclusion*

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

28. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Joy whose telephone number is (571) 272-9056. The examiner can normally be reached on Monday - Friday, 9:00 AM - 5:00 PM EDT.

30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L. Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJJ

04/09/2007

  
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